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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,877	12/02/2003	Kiwamu Sakano	36856.1142	2719

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EXAMINER

SUMMONS, BARBARA

ART UNIT PAPER NUMBER

2817

DATE MAILED: 03/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/725,877	SAKANO, KIWAMU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Barbara Summons	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16 and 17 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/2/03 &amp; 5/24/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR § 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "53", "54" and "55" shown in Fig. 11. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 9, 10 and 12 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2817

Each of claims 9 and 10 recite the limitation "the parallel inductor" on line 1 thereof. There is insufficient antecedent basis for this limitation in the claims. Should claims 9 and 10 correctly depend from claim 3? However, if claim 9 were made dependent upon claim 3, then claim 9 would be substantially identical to claim 15.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-8, 10-13 and 17 are rejected under 35 U.S.C. § 102(e) as being anticipated by Ikada et al. U.S. 6,781,479.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1, 2 and 13, Fig. 3 of Ikada et al. discloses a duplexer comprising: a transmitting SAW filter 2 and receiving SAW filter 3 that are connected in

Art Unit: 2817

parallel to an antenna terminal 21; and a matching circuit (31-33, 4 and 5)[see col. 5, lines 27-28 and col. 6, line 16] provided between the antenna terminal 21 and at least one of the transmitting filter 2 and the receiving filter 3, wherein a portion of the matching circuit, being open stubs 31 and 32, defines a trap circuit for harmonic suppression (see col. 3, lines 56-60 and col. 7, lines 1-5).

Regarding claims 3, 6-8 and 10-12, the matching circuit includes a parallel inductor that is the shorted stub 33 (see col. 9, lines 32-34) connected between the antenna terminal and ground, wherein the shorted stub inductor is provided as a spiral/coil microstrip line (see col. 10, lines 12-17 and 41-42) in a multi-layer substrate of the duplexer package device shown in Figs. 1 and 2, and the matching circuit also includes a first parallel capacitor being the trap circuit/two open stubs 31 and 32 connected to the antenna terminal (see col. 9, lines 20-25), a series inductor 4 and a second parallel capacitor 5, the trap circuit/open stubs 31 and 32 also being provided in the multi-layer substrate.

Regarding claims 4 and 5, since the device of Ikada et al. functions the same as the invention (see Fig. 16 of Ikada et al. vs. Applicant's Fig. 5), the parallel inductor is considered to inherently have the same characteristics of the invention such as the recited Q factor of at least 20 and a combined reactance of the open stub (31, 32) and the parallel inductor (33) being capacitive. Regarding claim 17, see Fig. 17.

6. Claims 1-3, 7, 8, 10, 11 and 17 are rejected under 35 U.S.C. §§ 102(a) and 102(e) as being anticipated by Kushitani et al. U.S. 6,608,534.

Art Unit: 2817

Regarding claims 1-3, Figs. 17-19 of Kushitani et al. disclose a duplexer comprising: a transmitting filter 1610 (see col. 32, lines 24-28) and a receiving filter 1613 (see col. 32, lines 32-38) that are connected in parallel to an antenna terminal 1602; and a matching circuit (1604-1606 and 1715)[see col. 34, lines 4-16] provided between the antenna terminal and at least one of the transmitting filter and the receiving filter, wherein a portion of the matching circuit defines a trap circuit for harmonic suppression, the trap circuit being an open stub (not shown see col. 38, lines 4-26), the matching circuit also including a parallel inductor (i.e. transmission line 1715 that inherently provides inductance) connected between the antenna terminal and ground.

Regarding claim 11, both filters and the matching circuit are provided in a package shown in Figs. 18B and 19. Regarding claims 7, 8 and 10, the package is a multilayer substrate such that the multilayer substrate can be considered to have the package and all of the matching and harmonic trap components mounted thereon or therein. Regarding claim 17, see e.g. col. 32, lines 1-4.

7. Claims 1, 13, 14, 16 and 17 are rejected under 35 U.S.C. §§ 102(a) and 102(e) as being anticipated by Noguchi et al. U.S. 6,489,861.

Regarding claims 1 and 13, Fig. 30 of Noguchi et al. discloses a SAW duplexer comprising: a SAW ladder-type transmitting filter 110 and a SAW ladder-type receiving filter 212 that are connected in parallel to an antenna terminal Ta; and a matching circuit 302 provided between the antenna terminal and at least one of the transmitting filter and the receiving filter, wherein a portion of the matching circuit (i.e. series capacitor Ca0

Art Unit: 2817

and series inductor  $L_a$  that are connected in parallel) defines a trap circuit for harmonic suppression (see e.g. col. 7, lines 26-33 and col. 8, lines 57-60).

Regarding claims 14 and 16, the SAW transmitting filter 110 is a T-shaped ladder SAW filter having a first series resonator  $R_{s1}$  connected to the antenna side.

Regarding claim 17, see col. 1, lines 10-11.

### ***Allowable Subject Matter***

8. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claim 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Keep in mind that if only the dependency of claim 9 is changed, it may become identical to claim 15 and then those claims would be objected to for being identical.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Khatibzadeh U.S. 5,095,285 discloses that a harmonic trapping circuit 40 (Fig. 2) and a matching circuit 50 are linked by their effects on each other and can thus be considered as one larger circuit that performs both matching and harmonic suppression (see e.g. col. 3, lines 40-43).

Art Unit: 2817

Dent U.S. 6,577,199 also discloses a matching circuit that also provides harmonic suppression (see e.g. the abstract).

Gaynor et al. U.S. 5,939,939 also discloses a matching circuit that provides harmonic suppression as well (see Figs. 10 and 11 and col. 2, lines 33-39).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Summons whose telephone number is (571) 272-1771. The examiner can normally be reached on M-Th, M-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal can be reached on (571) 271-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bs  
March 2, 2005

  
**BARBARA SUMMONS**  
**PRIMARY EXAMINER**